

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A lookup method for use in a switch, comprising the steps of:
parsing a packet header to obtain a plurality of data fields;
selecting at least one of said plurality of data fields as a protocol identifier and using said protocol identifier to directly access a Server Flow Table start pointer (sFlowRTP);
performing a first lookup using said sFlowRTP and using one or more of said data fields as a first key to determine a Client Flow Table start pointer (cFlowRTP);
performing a second lookup using said cFlowRTP and using one or more of said data fields as a second key to obtain a flow entry; and
switching said packet using said flow entry.

Claim 2 (original): The method of Claim 1, wherein said first lookup or said second lookup is performed in a Patricia tree.

Claim 3 (original): The method of Claim 1, wherein said first lookup or said second lookup utilizes a content addressable memory.

Claim 4 (previously presented): The method of Claim 3, wherein said content addressable memory comprises a ternary content addressable memory.

Claim 5 (original): The method of Claim 1, wherein said direct access, said first lookup, and said second lookup are pipelined.

Claim 6 (original): The method of Claim 1, wherein for packets arriving at a plurality of ports, at least said selecting, said performing said first lookup, and said performing said second lookup are time division multiplexed.

Claim 7 (original): The method of Claim 1, further comprising:
validating said sFlowRTP prior to performing said first lookup;
validating said cFlowRTP prior to performing said second lookup; and
validating said flow entry prior to performing said switching.

Claim 8 (original): A computer switching system, comprising computer instructions for:

- parsing a packet header to obtain a plurality of data fields;
- selecting at least one of said plurality of data fields as a protocol identifier and using said protocol identifier to directly access a Server Flow Table start pointer (sFlowRTP);
- performing a first lookup using said sFlowRTP and using one or more of said data fields as a first key to determine a Client Flow Table start pointer (cFlowRTP);
- performing a second lookup using said cFlowRTP and using one or more of said data fields as a second key to obtain a flow entry; and
- switching said packet using said flow entry.

Claim 9 (original): The switching system of Claim 8, wherein said first lookup or said second lookup is performed in a Patricia tree.

Claim 10 (original): The switching system of Claim 8, wherein said first lookup or said second lookup utilizes a content addressable memory.

Claim 11 (previously presented): The switching system of Claim 10, wherein said content addressable memory comprises a ternary content addressable memory.

Claim 12 (original): The switching system of Claim 8, wherein said direct access, said first lookup, and said second lookup are pipelined.

Claim 13 (original): The switching system of Claim 8, wherein for packets arriving at a plurality of ports, at least said selecting, said performing said first lookup, and said performing said second lookup are time division multiplexed.

Claim 14 (original): The switching system of Claim 8, further comprising:
validating said sFlowRTP prior to performing said first lookup;
validating said cFlowRTP prior to performing said second lookup; and
validating said flow entry prior to performing said switching.

Claim 15 (original): A computer-readable medium storing a computer program executable by a computer, the computer program comprising computer instructions for:
parsing a packet header to obtain a plurality of data fields;
selecting at least one of said plurality of data fields as a protocol identifier and using said protocol identifier to directly access a Server Flow Table start pointer (sFlowRTP);
performing a first lookup using said sFlowRTP and using one or more of said data fields as a first key to determine a Client Flow Table start pointer (cFlowRTP);
performing a second lookup using said cFlowRTP and using one or more of said data fields as a second key to obtain a flow entry; and
switching said packet using said flow entry.

Claim 16 (original): The computer-readable medium of Claim 15, wherein said first lookup or said second lookup is performed in a Patricia tree.

Claim 17 (original): The computer-readable medium of Claim 15, wherein said first lookup or said second lookup utilizes a content addressable memory.

Claim 18 (currently amended): The computer-readable medium of ~~Claim 19~~ Claim 17, wherein said content addressable memory comprises a ternary content addressable memory.

Claim 19 (original): The computer-readable medium of Claim 15, wherein said direct access, said first lookup, and said second lookup are pipelined.

Claim 20 (original): The computer-readable medium of Claim 15, wherein for packets arriving at a plurality of ports, at least said selecting, said performing said first lookup, and said performing said second lookup are time division multiplexed.

Claim 21 (original): The computer-readable medium of Claim 15, further comprising:
validating said sFlowRTP prior to performing said first lookup;
validating said cFlowRTP prior to performing said second lookup; and
validating said flow entry prior to performing said switching.

Claim 22 (original): A computer data signal embodied in a carrier wave, comprising computer instructions for:

- parsing a packet header to obtain a plurality of data fields;
- selecting at least one of said plurality of data fields as a protocol identifier and using said protocol identifier to directly access a Server Flow Table start pointer (sFlowRTP);
- performing a first lookup using said sFlowRTP and using one or more of said data fields as a first key to determine a Client Flow Table start pointer (cFlowRTP);
- performing a second lookup using said cFlowRTP and using one or more of said data fields as a second key to obtain a flow entry; and
- switching said packet using said flow entry.

Claim 23 (original): The computer data signal of Claim 22, wherein said first lookup or said second lookup is performed in a Patricia tree.

Claim 24 (original): The computer data signal of Claim 22, wherein said first lookup or said second lookup utilizes a content addressable memory.

Claim 25 (currently amended): The computer data signal of ~~claim~~ Claim 24, wherein said content addressable memory comprises a ternary content addressable memory.

Claim 26 (original): The computer data signal of Claim 22, wherein said direct access, said first lookup, and said second lookup are pipelined.

Claim 27 (original): The computer data signal of Claim 22, wherein for packets arriving at a plurality of ports, at least said selecting, said performing said first lookup, and said performing said second lookup are time division multiplexed.

28 (original): The computer data signal of Claim 22, further comprising:
validating said sFlowRTP prior to performing said first lookup;
validating said cFlowRTP prior to performing said second lookup; and
validating said flow entry prior to performing said switching.

Claim 29 (original): A computer switching system comprising:
means for parsing a packet header to obtain a plurality of data fields;
means for selecting at least one of said plurality of data fields as a protocol identifier
and using said protocol identifier to directly accessing a Server Flow Table start pointer
(sFlowRTP);

means for performing a first lookup using said sFlowRTP and using one or more of
said data fields as a first key to determine a Client Flow Table start pointer (cFlowRTP);

means for performing a second lookup using said cFlowRTP and using one or more of
said data fields as a second key to obtain a flow entry; and

means for switching said packet using said flow entry.

Claim 30 (original): The method of Claim 29, wherein said means for performing said
first lookup or said second lookup comprise a Patricia tree.

Claim 31 (original): The method of Claim 29, wherein said means for performing said
first lookup or said second lookup comprise a content addressable memory.

Claim 32 (original): The method of Claim 29, wherein said means for directly
accessing and said means for performing said first lookup and said second lookup are
pipelined.

Claim 33 (original): The method of Claim 29, wherein for packets arriving at a
plurality of ports, at least said means for selecting, said means for performing said first
lookup, and said means for performing said second lookup are time division multiplexed.

Claim 34 (original): The method of Claim 29, further comprising:

means for validating said sFlowRTP prior to performing said first lookup;

means for validating said cFlowRTP prior to performing said second lookup; and

means for validating said flow entry prior to performing said switching.

Claim 35 (original): A lookup method for use in a switch, comprising the steps of:
parsing a packet header to obtain a plurality of data fields;
selecting at least one of said plurality of data fields as a protocol identifier;
performing a server flow lookup using said protocol identifier and one or more of said data fields to determine said Client Flow Table start pointer (cFlowRTP);
performing a second lookup using said cFlowRTP and using one or more of said data fields as a second key to obtain a flow entry; and
switching said packet using said flow entry.